

Application No. 09/657,532
Amendment Accompanying RCE filed May 17, 2004
Reply to Office Action dated December 16, 2003

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Remarks

Claims 1-53 are pending, with claims 1, 15, 29, and 40 being in independent form. Claims 1, 15, 29, and 40 are amended.

In the Office Action, claims 1, 2, 9, 15, 16, 23, 29, 30, 37, 40, 41 and 48 stand rejected for obviousness over U.S. Patent No. 4,788,588 to Tomita in view of U.S. Patent No. 5,489,918 to Mosier and further in view of U.S. Patent No. 6,624,828 to Dresevic et al. ("Dresevic"). Claims 3-8, 10, 11, 17-22, 24, 25, 31-36, 38, 39, 42-47, 49 and 50 stand rejected for obviousness over Tomita, Mosier, and Dresevic and further in view of United States Patent No. 6,094,185 to Shirriff. Claims 12-14, 26-28 and 51-53 stand rejected for obviousness over Tomita, Mosier, Dresevic, and Shirriff and further in view of United States Patent No. 6,400,374 to Lanier.

Claim 1 defines a method for providing a consistent visual appearance of one or more pixels of a display screen with respect to a viewing position by compensating for variations between one or more perceived pixel level values associated with the one or more pixels and one or more corresponding pixel level values associated with the one or more pixels, the variations associated with one or more viewing angles between one or more locations of the one or more pixels and the viewing position. The method includes applying a respective different correction factor to each of the one or more corresponding pixel level values, the respective different correction factor being based on a respective viewing angle formed between a specific location on the display screen of the one or more pixels and the viewing position.

In accordance with the MPEP, to establish a prima facie case of obviousness, the cited documents must teach or suggest all of the claim limitations and there must have been a reasonable expectation that the cited documents could have been successfully combined. The rejections cannot stand at least because no combination of the cited documents teaches all of the claim limitations. Moreover, there would have been no reasonable expectation that the cited documents could have been successfully combined to yield a working system, which even then would have had to be further modified to obtain the claimed subject matter. Motivations to combine the cited documents would also be absent, but it should be sufficient to point out the absent limitations and the lack of a reasonable expectation of success.

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The method of claim 1 includes, among other things, "applying a respective different correction factor to each of the one or more corresponding pixel level values, the respective different correction factor being based on a respective viewing angle formed between a specific location on the display screen of the one or more pixels and the viewing position." The Examiner admits that Tomita fails to disclose or suggest this feature, but contends that this feature is disclosed in Mosier (Action, p. 3). Applicants disagree.

Mosier discloses a system for customizing ramp voltages to compensate for brightness problems of a display. Sets of grey scale values are selected to cause the optical characteristics of the display to produce correct color or uniform brightness regardless of the viewing angle (Abstract). The "viewing angle" as it relates to the display in Mosier, however, is a uniform angle for all the pixels of the display (perhaps described in two dimensions). That is, in Mosier, the entire display, i.e., every pixel, is assigned the same viewing angle. Mosier discloses, "The viewing angle for an LCD is derived" at col. 26, ll.15-16 (emphasis added). Throughout Mosier, the "viewing angle" refers to the viewing angle of an entire display, without exception. This is also clear from FIGs 1 and 2 of Mosier, which show a single viewing angle to the center of the screen in every case.

In contrast, claim 1 defines a step of applying a respective different correction factor to each of the one or more corresponding pixel level values a respective viewing angle formed between a specific location on the display screen of the one or more pixels and the viewing position. Different pixels can have respective viewing angles based on their specific location on the display screen. For example, as illustrated in FIG. 4 of the application and described beginning at page 13, line 20; different pixels on the display have different relative viewing angles. Claim 1 takes this into consideration, since the correction factor for each pixel is based on a respective viewing angle based on their specific location on the display screen, and not based on the viewing angle to the center of the screen, as in Mosier.

If one were to apply the teachings of Mosier to the invention defined by claim 1, each pixel would have the same viewing angle (to the center of the screen) and thus would receive the correction factor, which clearly is not what is defined by claim 1.

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Consequently, the invention defined by claim 1 provides better pixel correction than Mosier's method. As can be appreciated from FIG. 4 of the specification, the viewing angle from a fixed point, i.e., a viewer's eye, is not the same for all the pixels. Three angles, Θ , Θ' , Θ'' are shown in FIG. 4, although more can be used. Assigning the same angle to every pixel in claim 1, as in Mosier, would lead to some pixels being assigned an improper ramp voltage setting, since the angle is not the same for all pixels.

This deficiency of Mosier is not surprising, when you consider that Mosier is concerned with an airplane cockpit scenario where the displays are relatively far away. The further from the display you are, the less important the angle difference between specific locations on the display become.

None of Tomita, Dresevic, Shirriff, and Lanier cures this deficiency.

Accordingly, since no combination of the cited documents discloses or suggests all of the claim limitations for at least the above reasons, the obviousness rejections of claim 1 should be withdrawn. In addition, the obviousness rejections of independent claims 15, 29, and 40, and of all the respective dependent claims, should be withdrawn for at least the same reasons.

Moreover if one had attempted to combine the disclosures of the cited documents, one would have been more likely to arrive at something that did not work at all or not in the manner claimed by the present application. As discussed above, one of ordinary skill in the art would have known that the features of Tomita, Mosier, and Dresevic cannot be combined without further modification to reach the subject matter defined by the claims. None of the documents disclose or suggest the use of a different correction factor based on a specific location on the display screen of the one or more pixels. In the absence of any suggestion in the cited documents of how to make such a combination operable, one would have faced a serious engineering problem that naturally would have had a low probability of success without substantial experimentation and effort, especially in view of the need to modify the teachings of the documents. It is well settled that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make that modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992).

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Accordingly, Applicant asserts that the combination of documents relied upon to support the obviousness rejections of the claims is improper, and respectfully requests they be reconsidered and withdrawn for this reason also.

Furthermore, the Action relies on a mosaic of 4 or 5 documents: Tomita, Mosier, Dresevic, Shirriff, and Lanier, in the rejection of some of the claims. It appears that the claims have been used as a template to piece together the teachings of the prior art to render the claimed subject matter obvious. This is impermissible. In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

For the foregoing reasons, Applicants consider the application to be in condition for allowance and respectfully request notice thereof at an early date. The Examiner is encouraged to telephone the undersigned at the below-listed number if, in the Examiner's opinion, such a call would aid in the examination of this application.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

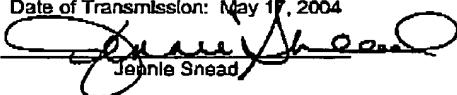

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